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II

# International Maritime Protection Symposium

*Office of the Assistant Secretary of Defense  
Networks and Information Integration*

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# *Agenda*

- ✦ A Taxonomy of Interaction
- ✦ A Contextual Discussion of Interoperability
- ✦ Rule Sets and their Implications
- ✦ A View of the Future



# *A Doctrine in Evolution*

RANGE OF MILITARY OPERATIONS			
Military Operations		General US Goals	Representative Examples
COMBAT	War	Fight & Win	<u>Large Scale Combat Operations</u> <u>Attack / Defend / Blockade</u>
	NONCOMBAT	Deter War & Resolve Conflict	Peace Enforcement Counterterrorism Show of Force/Raid/Strike Peacekeeping/NEO Nation Assistance Counterinsurgency
		Promote Peace & Support US Civil Authorities	Freedom of Navigation Counterdrug Humanitarian Assistance Protection of Shipping US Civil Support



# Interoperability in the 21<sup>st</sup> Century

❖ (1) Snowflake  
qanuk 'snowflake'

❖ qanir- 'to snow'

❖ qanunge- 'to snow' [NUN]

❖ qanugglir- 'to snow' [NUN]

❖ (2) Frost  
kaneq 'frost'

❖ kaner- 'be frosty/frost sth.'

❖ (3) Fine snow/rain particles  
kanevvluk 'fine snow/rain particles'

❖ kanevcir- to get fine snow/rain particles

❖ (4) Drifting particles natquik 'drifting snow/etc'

❖ natqu(v)igte- 'for snow/etc. to drift along ground'

❖ (5) Clinging particles  
nevluk 'clinging debris/

❖ nevlugte- 'have clinging debris/...'lint/snow/dirt...'

## B. Fallen snow

❖ (6) Fallen snow on the ground  
aniu [NS] 'snow on ground'

❖ aniu- [NS] 'get snow on ground'

❖ apun [NS] 'snow on ground'

❖ qanikcaq 'snow on ground'

❖ qanikcir- 'get snow on ground'

❖ (7) Soft, deep fallen snow on the ground  
muruaneq 'soft deep snow'

❖ (8) Crust on fallen snow  
qetrar- [NSU] 'for snow to crust'

❖ qerretrar- [NSU] 'for snow to crust'

❖ (9) Fresh fallen snow on the ground  
nutaryuk 'fresh snow' [HBC]

❖ (10) Fallen snow floating on water  
qanisqineq 'snow floating on water'

## C. Snow formations

❖ (11) Snow bank  
qengaruk 'snow bank' [Y, HBC]

❖ (12) Snow block  
utvak 'snow carved in block'

❖ (13) Snow cornice  
navcaq [NSU] 'snow cornice, snow (formation) about to collapse'

❖ navcite- 'get caught in an avalanche'

## D. Meteorological events

❖ (14) Blizzard, snowstorm  
pirta 'blizzard, snowstorm'

❖ pircir- 'to blizzard'

❖ pirtuk 'blizzard, snowstorm'

❖ (15) Severe blizzard  
cellallir-, cellarrlir- 'to snow heavily'

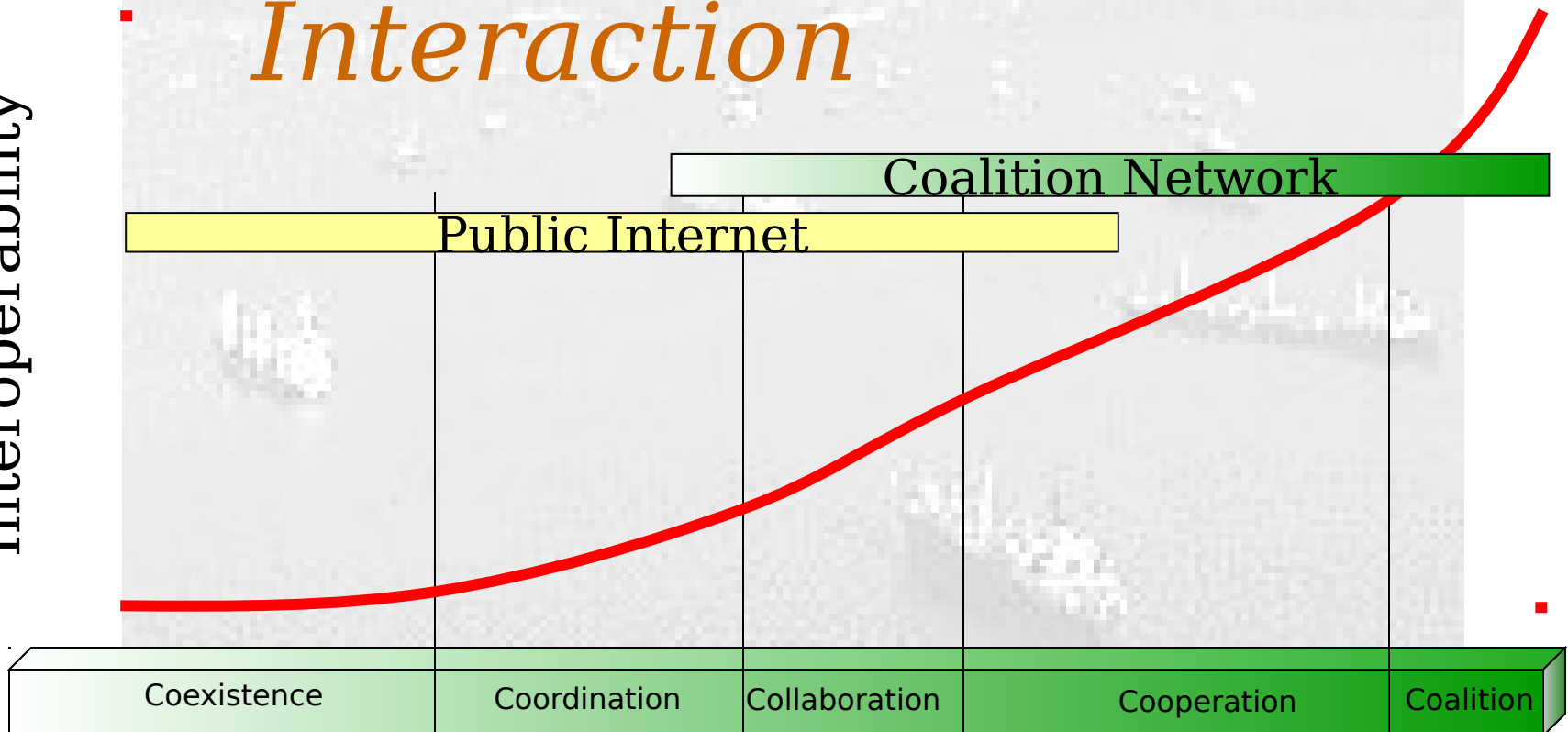
❖ pir(e)t(e)pag- 'to blizzard severely'

❖ pirrelvag- 'to blizzard severely'



# *Taxonomy of Interaction*

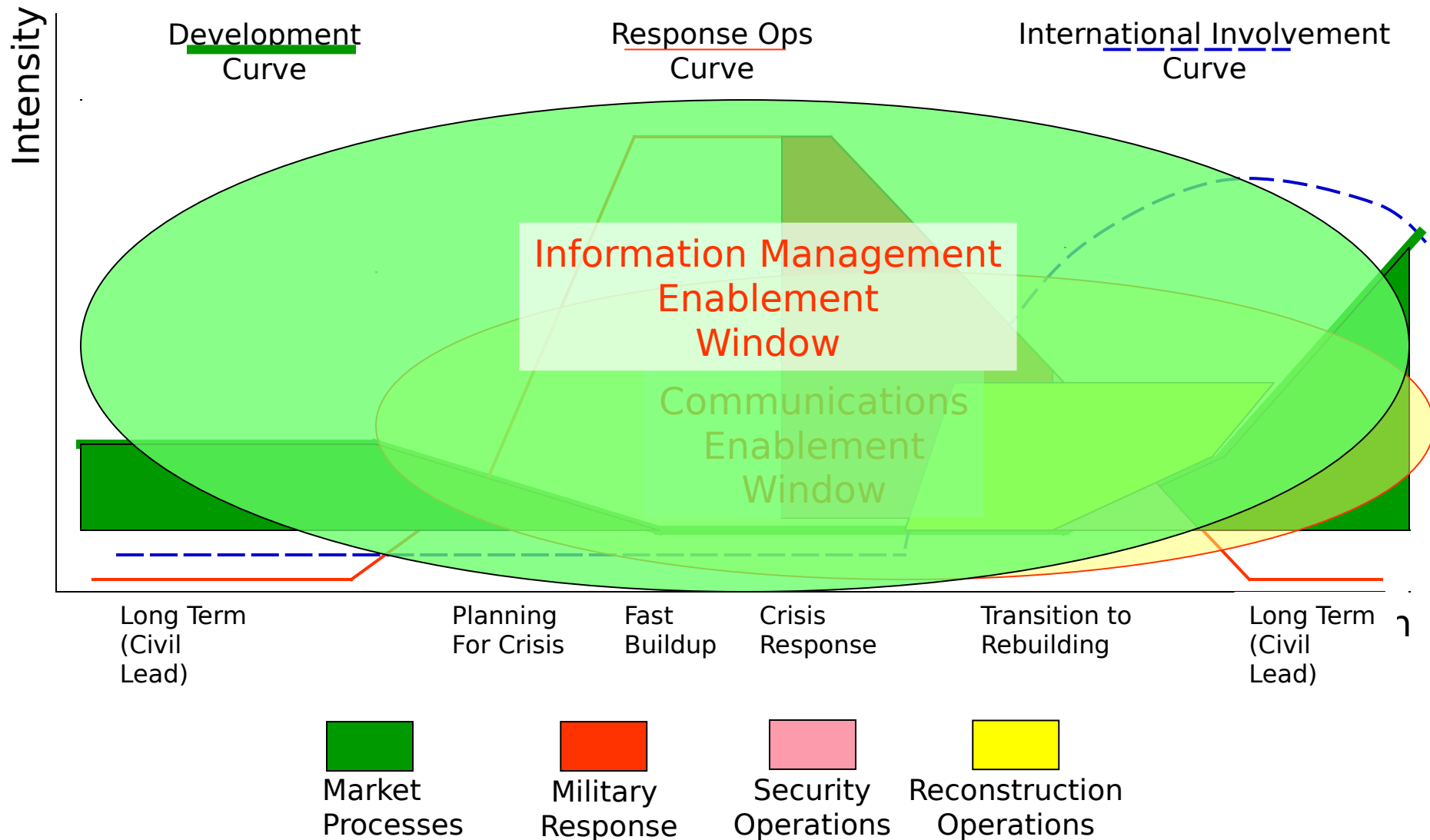
Interoperability





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# *Crisis Response Phenomenology*





# *International Lessons Learned*

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**Rule Set A<sub>1</sub>**

Coalition  
Military  
Command  
and Control

US Military  
Command and  
Control

**Rule Set A**

**Rule Set B**

Civil Infrastructure

**Rule Set C**

Commercial Infrastructure





# *Key Findings*

- ✚ Integrated civilian and military efforts are key for effectiveness and efficiency in Military Operations Other Than War
  - ✚ Promoting Peace
  - ✚ Humanitarian Assistance/Disaster Relief
  - ✚ Stabilization and Reconstruction
- ✚ Information and Communication Technologies (ICTs) lessons learned are essentially the same for:
  - ✚ Promoting Peace
  - ✚ Peace Operations
  - ✚ Humanitarian Assistance/Disaster Relief
  - ✚ Stabilization and Reconstruction
- ✚ ICT Lessons Learned must be analyzed contextually





# *Rule Set A Process*

## *Findings*

- ⊕ HADR/S&R missions are not fully developed in US military doctrine
- ⊕ Many data standards exists for HADR/S&R for DoD
- ⊕ No standard for classification exists across DoD
- ⊕ DoD HADR/S&R information is not integrated into C2 systems
- ⊕ Disconnected operations are now often the rule.
- ⊕ Report detail cannot be lost across echelons.
- ⊕ All data must be geo-located at the same level of accuracy



# *Rule Set A<sub>1</sub> Process*

## *Findings*

- ✚ Following National Development Process
- ✚ Focused Appropriately on National Priorities
- ✚ Trend Continues Toward International Cooperation
- ✚ Greater Market-based Focus
- ✚ Influenced by US Interoperability and Standards Discussion



# *Rule Set B Process Findings*

- ⊕ Who is a responder
  - ⊠ 1<sup>st</sup> – Victim
  - ⊠ 2<sup>nd</sup> – The Press
  - ⊠ 3<sup>rd</sup> – Local Responders
  - ⊠ 4<sup>th</sup> – Federal/State
  - ⊠ 5<sup>th</sup> – International Response
- ⊕ First responder systems dependent on civil infrastructure may not survive.
- ⊕ Plan on not having public power or climate controlled environments.
- ⊕ Plan on spectrum clutter and conflicts
- ⊕ Plan on integrating disparate systems on the fly.
- ⊕ Expect to be the social bridge between military and non-government organizations.
- ⊕ Situation may require new trust relationships on surviving networks.
- ⊕ Expect vague and overlapping boundaries between military and civil responder perceptions of responsibilities.
- ⊕ Expect to deal with equally forceful personalities that do not share your lexicon.



# *Rule Set C Process*

## *Findings*

- ⊕ Quickly assess extent of civil infrastructure disruption and then publicize what remains. (e.g. text messaging)
- ⊕ Civil infrastructure reconstitution should be prioritized.
  - ⊠ Restoration of first responder system dependent infrastructure
  - ⊠ Restore wireless connectivity before wire line
  - ⊠ Seek to establish wireless clouds over population centers
- ⊕ Plan on providing power for all equipment
- ⊕ Equipment should not require climate controlled environments.
- ⊕ Independent communication suppliers may be the only way to satisfy civil capacity requirements



# *Rule Set AA<sub>1</sub>BC Process*

## *Findings*

- ✚ Disconnected operations are the rule, rather than the exception.
- ✚ Agility, through planning and exercising, is more valuable than planning alone.
- ✚ Effectiveness and efficiency depends on fully incorporating non-military organizations.
- ✚ ICT will likely be COTS, non-secure, with little network discipline.
- ✚ Trust grows better when collaboration occurs on neutral ground.
- ✚ On neutral ground, COTS solutions protect the data--not the network.
- ✚ Expect vague and overlapping boundaries between rule sets.
- ✚ Communications enablement now coequal with rescue/initial response.



# *A View of the Future*

- ⊕ Doctrinal recognition of information sharing requirements
- ⊕ International recognition of data standards, fostering info exchange
  - ⊞ Market Driven
- ⊕ Training and Exercising Planning for operations in austere environments.
- ⊕ Turn IA war of attrition against disrupters
  - ⊞ Hide in the noise